

DRAFT MEETING SUMMARY (v.1)

DRAFT - NOT APPROVED BY COMMITTEE

HANFORD ADVISORY BOARD
HEALTH, SAFETY, AND ENVIRONMENTAL PROTECTION COMMITTEE
April 11, 2002
Richland, WA

Topics in this Meeting Summary

Introduction.....	1
Integrated Safety Management System (ISMS) – Headquarters Review	1
Defense Nuclear Facility Safety Board – ISMS Presentation	3
Air, Soil and Water Monitoring – Emergency and Routine	6
Site Integration Issues	7
Site Integration Issues – Emergency Response System.....	9
Site Integration Issues, Infrastructure	10
Advice	11
Committee Business.....	11
Handouts	11
Attendees.....	12

<i>This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.</i>

Introduction

Vice-chair of the Health, Safety, and Environmental Protection (HSEP) Committee Keith Smith welcomed everyone to the meeting and announced that Dan Simpson, the committee's Chair, was not able to attend due to illness. Attendees introduced themselves.

Integrated Safety Management System (ISMS) – Headquarters Review

Gerry Bell, Department of Energy – Richland Operations Office (DOE-RL), explained that the Department of Energy – Headquarters (HQ) is conducting its third, large review of operations at Hanford. The Secretary of Energy's Office of Independent Oversight and Performance Assurance (OA) team from DOE-HQ conducts reviews across the DOE complex on how organizations implement safety management processes.

In late January and early February the team visited the site to review DOE-RL and Fluor's Plutonium Finishing Plant (PFP) operations; Department of Energy – Office of River Protection (DOE-ORP) was not included in this review. The team conducted two-week long field review of PFP and observed the workers performing their jobs. Gerry Bell provided committee members with a copy of the draft report, an Executive Summary of the report, and a copy of the briefing.

The OA-50 report did not list any “findings” for DOE-RL, although it did offer “opportunities for improvement” (less severe than “findings”) across the Richland Integrated Management System (RIMS) process. The review identified six findings at PFP that DOE-RL and Fluor will have to jointly, formally address through a corrective action plan to be submitted to DOE-HQ. After Assistant Secretary of Energy Jessie Roberson approves the plan, a corrective action tracking system will validate completion of the correction actions. The corrective action report must be submitted within 60 days the date the report was issued (March 27th).

The six findings at PFP were:

- 1) Feedback mechanisms not fully effective in identifying safety management deficiencies and issues management processes not effective in evaluating and resolving deficiencies in a timely manner.
- 2) Unreviewed Safety Question (USQ) process is not consistently implemented.
- 3) Inconsistent implementation of the Automated Job Hazard Analysis (AJHA) process.
- 4) Radiological monitoring equipment outdated and of questionable quality.
- 5) Lack of documented rationale for not performing bioassays for certain contamination events.
- 6) Some modifications of facilities are incorrectly categorized as repairs, resulting in inadequate review of work within the facility modification program.

The review team added two more findings before the report was finalized. This review was just one assessment; there are still independent contractor assessments, other technical assessments, and reviews by the Defense Nuclear Facilities Safety Board (DNFSB) and the Washington State Department of Ecology (Ecology). In addition, contractors use formal, independent oversight. The challenge is to roll up all the results and assess the overall safety system. DOE-RL undertakes annual planning on risk and on how it will assess itself and its contractors.

Gerry Bell emphasized that these were not hard-hitting findings and should be relatively easily addressed and fixed. This review was the first external look at the Integrated Safety Management System (ISMS) for DOE-RL, and to have only six findings is essentially a clean bill of health. He added that DOE-RL has its own tracking system in place to track the opportunities for improvement, even though it is not formally required to do so.

Committee Questions/Discussion

- Is the annual review by the contractor an internal review? Becky Austin, Fluor, explained that it is internal, but the review team is an independent group within Fluor, staffed partially by independent contractors and occasionally external experts from Fluor Corporate.
- Issue Manager Tim Takaro asked whether the report addressed a new triggering of the Employee Job Task Analysis (EJTA). Becky Austin, Fluor, answered that the relevant finding was related to noise hazard not being adequately covered in the Automated Job Hazard Analysis (AJHA), although it is covered in the EJTA.

PPF had a standing AJHA that did not include noise hazard, but all high noise areas are posted and employees are required to have hearing protection, which is covered in the EJTA.

- Jim Trombold asked whether there is a site-by-site process for job hazards. Becky Austin responded that within Fluor, the requirements for job hazard analysis are consistent across facilities and cover the full range of work: environmental, noise, radiological, engineering controls and requirements. The safety analysis includes workers, the public, and the environment. Employees have to sign off on the EJTA and the documents are reviewed with staff annually.
- Did the review include any sub-contractors? The review team looked at facilities and there were on the spot corrections of minor work.
- How did the review team decide which facilities to review? It was random and somewhat spontaneous. There was a month between the initial scoping meeting and the actual visit to PPF, which was not enough time for DOE-RL or Fluor to correct any suspected problems.
- How frequently does this review team visit? No more than every year, but they can return whenever they want. For critical issues, the team can come in through the Price Anderson Initiative.
- What is the relationship between OA-50 and EM-5? OA-50 reports to the Secretary of Energy. EM-5 is the oversight group that focuses on the field and can visit sites with greater flexibility.

The committee members will review the OA-50 report. Keith Smith commented that from an employee perspective, there is a notable improvement on the site since the introduction of ISMS and the Voluntary Protection Program (VPP).

Defense Nuclear Facility Safety Board – ISMS Presentation

Mark Sautman is one of two representatives of the Defense Nuclear Facility Safety Board (DNFSB) assigned to Hanford. His main responsibilities are the Plutonium Finishing Plant (PPF), the tank farms, the Waste Treatment Plant (WTP) and 200 Area Decontamination and Decommissioning. Although he presented the DNFSB perspective on ISMS, he emphasized that he does not speak for the DNFSB. The viewpoints he shared are based on conversations with DNFSB members, and any Hanford-specific comments reflected his personal opinions.

Recommendation 95-2 – which started ISMS – was issued in 1995 to ensure that DOE be subject to all safety plans. Currently the DNFSB's focus is on the third phase of ISMS; the basic elements are implemented, but complex-wide.

Some of the important successes of ISMS are strong commitment from DOE senior management and high levels of enthusiasm and participation among workers. Weaknesses are uneven implementation throughout DOE and ISMS's potential to become cumbersome as it grows in popularity. Many contractors have complained that there are too many requirements. The DNFSB has cautioned DOE against actions that would decrease the safety emphasis or a public perception of such. The DNFSB wants general guidance, in particular with regard to contracts, since it is skeptical that the field

offices have the internal expertise to negotiate requirements. The standards-based approach to ISMS also needs to be emphasized. Weaknesses of ISMS overall are the feedback mechanisms, an annual review process that should be more robust, and several human resources challenges.

At Hanford, the ISMS strengths are:

- 1) worker involvement in procedure development
- 2) worker ownership
- 3) Use of mockups - very useful in developing procedures and identifying field problems.
- 4) Big, high-hazard jobs are usually done very well because they are done by the best crews and best supervisors
- 5) There are post-job reviews for major activities.
- 6) Radiological protection – portable ventilation, using glove bags, the As Low As Reasonably Achievable (ALARA) Center is a good lessons learned resource for Hanford and whole complex.

The Hanford-specific ISMS areas to improve are:

- 1) Work screening – Sometimes high-risk activities are classified as medium risk, which leads to less rigorous hazards analysis.
- 2) Automated Job Hazards Analyses (AJHA), which is done through a computerized database that often misses new hazards.
- 3) AJHA does not always result in applicable controls and is focused on industrial hazards. Since much of the AJHA is boilerplate, workers tend to tune out.
- 4) Checklist mentality with regard to AJHA.
- 5) The DNFSB wants a process hazards analysis, which would involve speculating on what could go wrong. Walk downs are often neglected.
- 6) Subject matter experts need to work with workers to determine the appropriate level of control for unknown hazards.
- 7) Stapler integration
- 8) Routine and lower risk work is sometimes done carelessly. Most major accidents were in this area because there is little management involvement.

The DNFSB offered several suggestions for feedback and improvement. The Secretary of Energy deemed DOE-ORP's Annual Report as inadequate, so DOE-ORP is doing a big review. The DNFSB is concerned that a sweeping review of so many activities, conducted primarily in the summer when there is little activity in the tank farms, will not produce data reflective of the entire year. As for DOE-RL, its plan is not very well integrated; it is aware of this weakness and working to improve it. Regarding Corrective Action Management, Hanford is too focused on compliance, senior management commitment to corrective actions varies, and the validation of the effectiveness of corrective actions remains weak. Also, trending of operational performance or undesirable incidents rarely is tracked beyond lost workdays or skin protection.

Other problems are that post-job reviews for low risk/routine work are often nonexistent and lessons learned are often underutilized. Another area for improvement is to identify and correct design problems up front.

Problems specific to the tank farms are:

- There are documented serious problems:
 - Almost nonexistent assessments
 - Inadequate post-job reviews and lessons learned
 - Many of these issues were previously identified
- If the tank farms program would be different than ISMS, there should be a focused review of the new program. Jessie Roberson agreed to this.
- Since implementing corrective actions in the interim, there have been improvements with CH2MHill Hanford Group (CHG). The new tools for hazards analysis should be implemented in June and could be used by other contractors and other sites. There is a strong senior management commitment to corrective action in the tank farms, although there are still weaknesses in the line management programs.

Committee Questions/Discussion

- Is there adequate recognition of the health and safety trade offs when work schedules are accelerated? Mark Sautman relayed that the DNFSB would rather look at the health and safety issues up front, because management of the projects requires knowing the risk trade offs. Evaluating cumulative risk may indicate that a short-term increase in risk is worthwhile. Shirley Olinger, DOE-RL, added that the focus now is on taking short-term risks to get momentum to reduce the long-term risks.
- Tim Takaro expressed appreciation at hearing from the DNFSB and asked if the DNFSB looked at implementation of EJTA. Mark Sautman explained that when the DNFSB is starting a specific process, it will look at the EJTA, but has not yet looked at EJTA programmatically due to limited staff availability. Doug Shoop, DOE-RL, pointed out that there are only two DNFSB facility representatives and evaluating EJTA is actually the responsibility of DOE-RL and the contractor.
- Doug Shoop, DOE-RL, explained that DOE-RL's weakest aspect of ISMS is incorporating all the feedback. DOE-RL will focus on improving this and developing good performance metrics. Shirley Olinger added that DOE-RL is also working to agree with the contractor to narrow the focus of items for management concern.
- Jim Trombold observed that the safest operations are often ensured by the workers. He asked if there is something that would help increase safety on a daily basis. Shirley Olinger, DOE-RL, said there are procedural hold points, but more emphasis should be put into holding managers accountable.
- Are there annual assessments of ISMS? Doug Shoop, DOE-RL, explained that Phase 1 and 2 were to ensure the basic system is in place and functioning effectively. The annual assessments are needed to help roll it all up.
- The committee expressed appreciation at hearing Mark Sautman's thorough, independent perspective.

Regulator Perspectives

Michelle Anderson-Moore, Ecology, noted that Ecology applauds anything that helps worker safety. Although Ecology does not regulate ISMS, it has observed improvements over the last few years and would be happy to provide information.

Air, Soil and Water Monitoring – Emergency and Routine

Issue Manager Jim Trombold explained that he thought the HSEP committee and Hanford Advisory Board (HAB) should be aware of the status of soil, air, and water monitoring. Debra McBaugh, Washington State Department of Health (DOH) provided an overview of the Radiation Monitoring Program.

Environmental Radiological Monitoring began in the 1940s. DOH began monitoring in 1960; the University of Washington did previous monitoring of the Columbia River in the 1940s with funding from the Atomic Energy Commission. Monitoring is not decreed by law, but must be done to satisfy the Nuclear Regulatory Commission (NRC), DOE orders, and siting permits with DOH. Today at Hanford, near-field monitoring is done by Duratek to ensure worker safety and that air emissions are safe. Pacific Northwest National Laboratory (PNNL) does far-field monitoring on and off site.

The DOH sampling objectives are:

1. Oversight of sampling programs at Hanford, as well as at any licensee with an environmental sampling program. DOH splits samples and duplicates for quality assurance. Oversight is a requirement in state legislation and DOE requires independent oversight of its monitoring programs.
2. DOH tends to focus sampling in areas with potential for impact to the public, so many samples are collected along the river and from groundwater near cities.
3. Special studies. Recently DOH did a study of the 100N Area along the shoreline, since that is an area with strong Sr-90.
4. Assuring compliance with regulations. DOH has to assure that licensees and Hanford meet dose limits and air emissions standards. DOE has adopted the same standards of other licensees.

DOH only samples nuclear material, not heavy metals, which is Ecology's domain. The sampling regimen includes 1) air around facilities and offsite, 2) surface and groundwater, 3) soil and sediment, 4) biota, including vegetation, aquatic and terrestrial creatures, as well as farm produce through wine sampling, other produce, pasture grass, and milk, and 5) direct radiation exposure (ambient).

Debra McBaugh distributed the sampling schedule for 2002 and provided an overview of the Wildfire Report findings. All data confirmed that emergency workers and public were not in danger from radionuclides transported in the wildfire. After the wildfire, DOH set up five additional sampling stations. Only the Prosser barricade showed measurable plutonium, but it was far below the National Emissions Standard for Hazardous Air Pollutants (NESHAP), which is the annual limit and assumes exposure every day for a year. After the wildfire, DOH also took samples from four windstorms near the 200 Area to determine whether there was plutonium in the dust. Plutonium was

found in three of the windstorms and the highest value was three times higher than the NESHAP limit. A few samples showed bits of plutonium near the 200 Area, but the annual concentration was not measurable at most places and nowhere near the NESHAP level at others. Routine sampling never stops, although sometimes samples are collected early. DOH has added the Prosser barricade to the routine sampling.

Committee Discussion/Questions

- Is DOH required to do an annual report? PNNL does an annual report that incorporates DOH's data. DOH is currently publishing its 1999 report and the 2000 report will be out soon. The DOH report incorporates PNNL's report, but also includes other licensees, such as Energy Northwest.
- Has DOH found high levels in farm produce? No.
- When contractors do the monitoring and DOH splits the samples, who receives the results? The results are public information. There is a legislative mandate for DOH to provide oversight monitoring, but fees and grants fund the radiation division of DOH, not the state. Because DOE is mandated to have independent oversight, it supplies funds but DOH is completely independent. DOE could have any independent party do the oversight, but long ago chose DOH.
- How do you decide what to test for? A gamma scan shows any gamma emitters, and then there are gross alpha scans and gross beta scans. All estimates are based on the worst possible alpha emitter from the results of the gross alpha scan.
- Were there any sensational results? Debra McBaugh commented that the tumbleweed is always a problem, although the situation is improving. Nothing was found in the vegetation along the river that would cause alarm.

Site Integration Issues

Issue Manager Tim Takaro explained that the committee is interested in the Bechtel National, Inc. (BNI) contract as it relates to the Integrated Safety Management System (ISMS). BNI is not participating in the Hanford Occupational Health Practice, and instead is using its own medical services and surveillance program. The committee wanted to see whether the BNI safety program could be integrated into the site medical surveillance program so there would be an interface with ISMS. The goals for ISMS are to know who is working on the site and what they are doing, including job activities and potential hazards, to ensure appropriate medical monitoring and fitness for duty. There is a law, Section 3162, which requires a program for former and current workers who are subject to health risks as a result of exposure to hazardous or radioactive substances.

Within the Hanford Occupational Health Process, the Employee Job Task Analysis (EJTA) is an automated process completed periodically. The manager fills out the EJTA in cooperation with the industrial hygienist and the worker. An EJTA gathers exposure information based on job task. This system is not perfect yet, since not all workers sign off on all the EJTA's that cover them. Workers are enrolled in medical monitoring and qualification programs according to the EJTA's for their job. Instead of an EJTA, BNI collects similar information in the Safe Task Analysis Risk Reduction Task (STARRT) card, which is filled out for every worker every day, based on the task that day. It covers physical and environmental hazards and is tailored to the work task.

It is not likely that the information from the STARRT card can be plugged into the Risk Medical System since the STARRT card does not collect all the information on the EJTA. An EJTA could be filled out once per year in addition to the STARRT card, but this would likely cost about \$3 million since there will be so many workers for construction of the Waste Treatment Plant (WTP).

The transition from construction to operations is another issue of concern. Between 2007 and 2011 there will be construction workers on the site at same time when operators are learning to operate the plant. The operations contract will be separate from the BNI contract, but there will be BNI workers on the production team until the building is turned over to the operations contractor.

The HSEP committee's policy goals are to:

- Maintain the function and viability of ISMS
- Keep ISM implementation transparent – the committee would like to hear from workers at a future HAB meeting
- Maintain a robust health screening program with preventive feedback to reduce risk
- Assure coordination of emergency response and security issues. BNI is using the Hanford Fire Department, but has its own security force, so coordination is an issue.

Tim Takaro expressed concerns about the precedent that contractors can set up their own health and safety monitoring systems. When there is a separate health and safety program, it is more difficult to obtain the lessons learned. Hanford now has three years of lessons learned from ISMS, and BNI presumably will have valuable information learned on the construction site.

Committee Questions/Discussion

- The committee discussed the fact that BNI considers the construction site an uncontaminated green field. Al Hawkins, DOE-ORP, explained that the construction site has been extensively surveyed down to 30-40 feet and is not subject to radiological concerns.
- Jim Trombold expressed concern that medical surveillance needs are decided in advance for different groups of workers. Al Hawkins explained that the contract was written in recognition that surveillance would have to be done differently to make the project faster, better, and cheaper. DOE-ORP welcomes HAB opinion on the optimal balance between project schedule and medical surveillance. He emphasized that BNI is not exempt from ISMS.

Al Hawkins, BNI, informed the committee that BNI is beginning Phase I verification for ISMS. DOE-ORP will also be subject to an independent review. He invited the committee to participate and observe in this process. Tim Takaro acknowledged that BNI is making a sincere effort to participate in ISM, but expressed concern about the likelihood of that when there is not a long-term commitment to the short-term construction workers. He thinks the EJTA is a useful tool to decide whether the site has hazards and then triggers monitoring. As a risk-based approach, it reduces the number of

workers who receive monitoring and hopefully means the right workers get the right monitoring.

Regulator Perspective

Michelle Anderson-Moore, Ecology, commented that Ecology does not regulate ISMS, although Steve Moore said he's been impressed with BNI's performance with this program.

Site Integration Issues – Emergency Response System

Judy Tokarz-Hames and Diane Clark were available to answer questions on the emergency response system. Al Hawkins, DOE-ORP, said that BNI is contractually required to use the site emergency management system. Jim McCormick-Barger, DOE-ORP, explained that the original BNI contract was modified to include an emergency preparedness plan during construction. As a result, BNI generated an Emergency Action Plan. Now BNI has an area emergency director and workers will have to evacuate or take cover according to sirens. BNI will coordinate emergency preparedness and eventually will implement the full emergency preparedness plan. If classification of the building changes from anything other than an administrative facility, BNI will have to change its emergency plan; currently it does meet 94-02 requirements.

BNI ran a drill last week and although the sirens did not function, everyone on site was accounted for within 30 minutes. Other drills will be coordinated with DOE-RL. Judy Tokarz-Hames explained that if an exercise included the evacuation of an entire area, the WTP would probably be included in that exercise; coordination would happen with DOE-ORP and BNI to determine whether participation was appropriate. BNI requires a construction site badge for entrance.

Committee Questions/Discussions

- Tim Takaro asked about the different security jurisdictions, since Hanford Patrol does not provide security for the BNI project. Diane Clark, DOE-ORP, explained that BNI has its own guard force within the construction site, primarily to keep the peace among construction workers and manage the work site. Any law enforcement issues would be coordinated with the Benton County sheriff. Different scales of emergencies have been tested and the interfaces between security forces are being documented to define roles and responsibilities. The BNI security force would not have overlapping responsibilities with Hanford Patrol. Since the construction site does not have radionuclides, radiological training is not needed and other safety training is provided. All construction workers need "SMARRT" training, which is equivalent of Occupational Safety and Health Act (OSHA) 10.
- Tim Takaro asked whether there would be a simulated evacuation that would require the interaction of the security forces. Diane Clark explained that DOE is looking at the Hanford site exercises. Judy Tokarz-Hames explained that 94-02 was the first big step to make sure it was in the contract. Jim McCormick-Barger added that the construction site has been declared an administrative facility and drills are very expensive, although needed for assurances.

Regulator Perspective

Michelle Anderson-Moore, Ecology, commented that she was more impressed with Bechtel Hanford than BNI. She was concerned that BNI appeared to make its own rules. Ecology wants everything on the site to be connected and work smoothly.

Site Integration Issues, Infrastructure

Steve Wisness, DOE-RL, described the status of infrastructure on the site. Infrastructure does encompass a significant part of the budget at Hanford and is in fairly good shape. To make upgrades, there is a prioritization scheme: 1) safety and meeting minimum requirements, 2) compliance activities, and 3) services needed by the rest of Hanford projects to keep them going. However, DOE-RL is now exploring the opportunity to reduce infrastructure life cycle costs since cleanup is accelerating. One of the main efforts is moving office workers off the site and consolidating the necessary services for construction of the WTP. They are trying to tailor infrastructure to needs but also provide a mindset of cleaning up quickly.

To integrate everything, DOE-RL is trying to develop a “City Manager” concept in which there is one provider for infrastructure services, with service level agreements with customers. To facilitate the City Manager concept, there could be a Site Service Board where people could talk about the issues with site services, costs, etc. It could be composed of members from each of the prime contractors. As part of the Cleanup Challenges and Constraints (C3T) process, DOE-RL is brainstorming all the services it provides and looking for significant savings in infrastructure life cycle cost in addition to shortened life cycle. The current infrastructure baseline goes out to 2070, but accelerating cleanup means shortening systems concentrating them where needed.

Another integration issue is at the Analytical Laboratories. The WTP has a need for analytical services, and had planned to build a laboratory, but DOE-RL figured out that the WTP could build a much smaller lab if it utilized 222 West.

Committee Questions/Discussion

- A committee member asked about the water systems. Steve Wisness explained that many are leaky, an additional driver for contaminants. Bill Floree, Fluor Hanford Site Services, said there are several projects on water lines. Where feasible, more lining could be done instead of replacing lines, which could lead to 40% cost savings.
- The committee asked about electrical infrastructure. One project is a feasibility study on replacing a certain line to the 100 Areas and simultaneously conducting a preliminary replacement study. There are also some transformers in the 300 Area that need to be replaced and some under-capacity transformers that may be replaced with smaller transformers. There is only one transformer that is borderline unsafe – an old grout facility in 200 East, north of Purex.
- The committee inquired about the power demand for WTP construction. There is a new transformer that has been built but not used yet. The power needs will be double what Hanford uses currently. A related concern is the high taxes and costs for using that much power; there is an effort to develop new technologies.

- Why did the WTP get a new road? It is actually more of an access point. There will be increased traffic on the road with workers hauling materials. DOE is exploring reopening the railroad to reduce truck traffic, and possibly use it for waste shipment.

Barb Wise pointed out that the committee might also want to be aware of truckloads of chemicals being transported for use in the vitrification process.

Regulator Response

Michelle Anderson-Moore commented that Ecology does not regulate electrical issues, unless there is a power failure that prevents alarms from functioning.

Advice

The committee discussed advice on the need to assure the viability of ISM, including complimenting what is good about ISMS, which does seem to be working on the site. BNI's approach to safety on the construction site raises a question about the long-term viability of ISMS. The committee felt the HAB should go on record to defend ISMS and in particular, the site wide medical surveillance. It will develop advice then run it past the Budgets and Contracts Committee, as the cross-cutting committee. Issue Manager Tim Takaro was no longer concerned about getting EJTA's for the construction workers, although he is still worried about the 2007-2011 transition time frame where there will be two contractors and two activities. Tim Takaro will write the first draft of the advice, which the committee will discuss during its May committee call in preparation for the June Board meeting.

Committee Business

The committee updated its workplan (attached).

Keith Smith will represent the committee on the Executive Issues Management Group call. The committee will not request a May meeting. The standing committee call was tentatively rescheduled for the third Wednesday of the month at 2:00 pm. EnviroIssues will check with committee members to confirm the suggested change. The next call will be May 15th.

Penny Mabie, EnviroIssues, reminded the committee that it must select leaders before the June Board meeting. She relayed that Dan Simpson would prefer not to chair the committee any longer. Committee members present suggested Keith Smith serve as Chair and that Tim Takaro serve as Vice-chair. Nominations can be submitted by e-mail or voice to EnviroIssues, but will close before the next committee call.

Handouts

- Health, Safety, and Environmental Protection Committee Agenda; April 11, 2002.
- The Hanford Leasing Program: Identified Procedural Improvements Research Report, by John Abbotts, Katherine Ertell, Timothy Takaro, Public Policy and Human Health Centers, and CRES-P-UW; January 2002.
- Integrated Safety Management presentation by Tim Takaro; April 11, 2002.

- Environmental Radiation Monitoring 101 or ERM-Lite, presentation by Debra McBaugh; April 11, 2002.
- State of Washington Department of Health, Environmental Radiation Program, Analysis of Environmental Radiological Data Relating to the 2000 Wildfire at Hanford, by Lynn Albin and Richard Jaquish; January 2002.
- Excerpt from the Washington Department of Health, Environmental Radiation Program, Annual Report
- State of Washington Environmental Radiation Section, Master Sampling Schedule, by Sandi Langford; January 2002.
- Inspection of Environment, Safety, and Health Management at the Hanford Site, by the Office of Independent Oversight and Performance Assurance of the Office of the Secretary of Energy; March 2002.
- Appendix B, Site-Specific Findings, Table B-1.
- Office of Independent Oversight and Performance Assurance, Highlights of Inspection of Environment, Safety and Health Management at the Hanford Site; March 5, 2002.
- DNFSB Discussion of ISMS Implementation, Presentation to HAB by Mark Sautman, Site Representative; April 2002.

Attendees

HAB Members and Alternates

Norm Dyer	Keith Smith	Tim Takaro
Jim Trombold		

Others

Gerry Bell, DOE-RL	Michelle Anderson-Moore, Ecology	Suzanne Heaston, BNI
Stan Branch, DOE-RL		Thomas Meagher, BNI
Shirley Olinger, DOE-RL		Bryan Kidder, CH2MHill
Doug Shoop, DOE-RL		Nora Lake, CH2MHill
Diane Clark, DOE-ORP		Mark Sautman, DNFSB
Al Hawkins, DOE-ORP		Penny Mabie, EnviroIssues
Jim McCormick Barger, DOE-ORP		Christina Richmond, EnviroIssues
Bruce Nicoll, DOE-ORP		Becky Austin, FH
		Barb Wise, FH
		Peter Bengtson, PNNL
		Debra McBaugh, WDOH